of the same metal is in itself a curious fact, but it becomes, I think, far more interesting when we find that these two classes of salts of the same metal, differing so strongly in their physiological action, yet have their strict physiological analogues in salts of other metals very different from iron. Thus the substances which, when introduced directly into the blood, produce effects analogous to the protosalts of iron, are the salts of magnesia, zinc, nickel, copper, and cadmium; whilst the salts that are analogous to the ferric salts in their physiological action are the salts of alumina and glucina. On the important bearing of these facts on the question of isomorphism and physiological reactions it is needless to enlarge. As regards the chemistry of respiration, the above experiments would show that the salts of the protoxide of iron, although so readily passing to a higher degree of oxidation when out of the body, are in some way preserved from the action of oxygen when mixed with the blood. Were not this the case a sufficient quantity of the persalt to prove fatal would soon be formed when fifty to seventy grains of the sulphate had been introduced into the blood. On the other hand, it would seem that the salts of the peroxide cannot be rapidly reduced whilst circulating with the blood, otherwise the effects of the small quantities used in some of my experiments would not have been so persistent."

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11. *Action of Narceine.*—Dr. JOHN HARLEY, whose valuable investigations in regard to the action of several narcotics we have referred to in the previous Vol. of this Journal, has instituted experiments to determine the action of narceine. He very justly remarks that much confusion exists with regard to the properties of this substance, and quotes in proof of this the statements of Claude Bernard, Béhier, Debout, Eulenberg, Liné, Da Costa, Oettinger, etc.

The following are his own conclusions: 1st. That narceine is a pure *hypnotic*, but that its action is so very feeble that 5 grains or more are required to induce a slight tendency to sleep, when the medicine is given in powder or solution by the stomach; and that, when introduced by the skin, 1 grain is equivalent to only ⅛ of a grain of morphia at most. 2d. That it is impossible to reduce this quantity to the state of a non-irritating solution of such bulk that it may be introduced by one or two punctures, without risk of inducing subcutaneous inflammation. 3d. Granting that an efficient dose may be introduced beneath the skin without inconvenience, evidence is wanting that it possesses any advantage over morphia. 4th. That narceine is, therefore, practically useless as a medicine. 5th. Narceine kills by depressing and ultimately paralyzing the respiratory movements.—*The Practitioner*, Nov. 1868.

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12. *Therapeutical Action of Veratrum Viride.*—M. OULMONT, in a memoir on this subject presented to the Academy of Medicine, states that he has employed the resinous extract made up into granules of one centigramme each, one of these being given every hour until vomiting takes place, this usually occurring after the third dose, although sometimes not until after the seventh or eighth. These short intervals are indicated by the fugitive character of the action of the medicine, and by the fact that this is not cumulative. Being aware of the elective action it exerts on febrile phenomena, M. Oulmont has administered the substance in cases of acute pneumonia, acute articular rheumatism, pleurisy, and typhoid fever. The following conclusions are drawn: 1. The veratrum acts directly by lowering the pulse and temperature, the former at the end of three or four hours diminishing by from twenty to fifty beats. The temperature lessens much more slowly, so that it is diminished by from a half degree to 2° C. only after three or four days. 2. The dose requisite to produce these effects is from 3 to 7 centigrammes per diem, and for durable effects to be produced, it must continue during three or four days. 3. It exerts a very favourable influence in simple pneumonia, the mean duration of which is reduced by its aid to 6¾ days, while the mortality is less under this mode of treatment than under any other. Its action on the local condition is only indirect by arresting the progress of the disease and hastening on resolution. According to Dr. Kocter, of Berne, the mortality of pneumonia treated by veratrum is but 8.3 per cent., while it is 13.5 by the expectant treat-

ment, 20.4 by antiphlogistics, and 20.7 by antimony. In complicated pneumonia its action is much less decisive. 4. Its action is far less satisfactory in acute rheumatism and pleurisy, while in typhoid fever its employment is contraindicated. 5. Accidents sometimes attend its administration, collapse sometimes occurring when this has been inopportune or too strong doses have been given. Singultus also not unfrequently occurs.—*Med. Times and Gaz.*, Nov. 21, 1868.

13. *Papaverine.*—The physiological action of papaverine on man has been studied by Dr. LEIDESDORF (*Wochenblatt der Zeitschrift der k. k. Gesellschaft der Aertze in Wein*, 1868, No. 14). He examined the hydrochlorate and phosphate, but found the latter objectionable as it caused considerable inflammation when subcutaneously administered. Papaverine acts as a narcotic and soporific, and produces muscular relaxation. It reduces the frequency of the pulse without any unpleasant secondary action; and appears to relax the bowels slightly. Its effects are manifested in about three hours, and continue for from twenty-four to forty-eight hours. Continued use does not seem to induce tolerance. Leidesdorf recommends doses of from half a grain to one grain for internal use, and from three to five drops of a solution of six grains of hydrochlorate of papaverine to sixty drops of water, for subcutaneous injection.—*Journ. Anat. and Phys.*, Nov. 1868.

14. *Assimilation of Phosphate of Lime and its Therapeutical Employment.*—MM. DUSART and BLACHE, of Paris, have endeavoured to determine the question whether the phosphate of lime enters into the system by the transformations it undergoes in the stomach, or whether it is necessary, for the purpose of assimilation, that it should undergo a previous elaboration in a living organism. The experiments they have instituted appear to show that the solution of the phosphate in the juices of the stomach is influenced by the form which the phosphate assumes, for while the hydrated phosphate is rapidly dissolved, calcined bones and hartshorn are not sensibly dissolved; and specimens containing carbonate of lime are dissolved only imperfectly. Messrs. Dusart and Blache, therefore, propose, as the best preparation for assimilation, the hydrated phosphate which has already been subjected to the action of the gastric acids, and which they call *lacto-phosphate of lime.* This substance has an agreeably acidulous taste, and is readily digested. Experiments were made upon some of the lower animals, with a view of determining whether the repair of fractured bones was accelerated by the internal use of the phosphate, and it was found that such was really the result. Under the use of the *lacto-phosphate of lime*, Messrs. Dusart and Blache found that the increase in weight of the bones of the animals exceeded by more than 33 per cent. the weight of the animals subjected to ordinary treatment. The animals chosen for the experiment were guinea-pigs.—*Brit. and For. Med.-Chir. Rev.*, October, 1868, from *Bull. Gén. de Thérap.*, July 30, 1868.

15. *Physiological Action of Belladonna.*—Dr. MEURIOT has published a most important and elaborate research on the physiological action of belladonna (*Bulletin Génér. de Thérapeutique*, tome lxxv., 1868, pp. 5 and 49). We can allude to only a few of his conclusions. 1. The local application of sulphate of atropia to the frog's web produces contraction of the arteries, marked activity of the circulation, and then, if the quantity applied be large, a stasis in the veins, which frequently appears, afterwards, in the arteries also. Hence, the tissues are first pale, and subsequently congested. The same general effects are produced on the bloodvessels by internal administration. 2. Atropia invariably accelerates the heart's action; but if a poisonous dose be given, this acceleration is succeeded by slowing. 8. With a small dose, the arterial tension is increased and the cardiac contractions rendered more frequent; the former being due to contraction of the bloodvessels, and the latter to paralysis of the terminations of the vagi. 4. In small doses, atropia always increases the number of the respiratory movements, even after section of the vagi; and in large doses, it first increases and then diminishes or